



Full wwPDB X-ray Structure Validation Report ⓘ

Nov 19, 2023 – 04:46 PM JST

PDB ID : 6LVS
Title : USP14 catalytic domain mutant C114S
Authors : Lin, H.C.; Lin, T.H.; Chou, C.Y.
Deposited on : 2020-02-04
Resolution : 2.73 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtrriage (Phenix) : 1.13
EDS : 2.36
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36

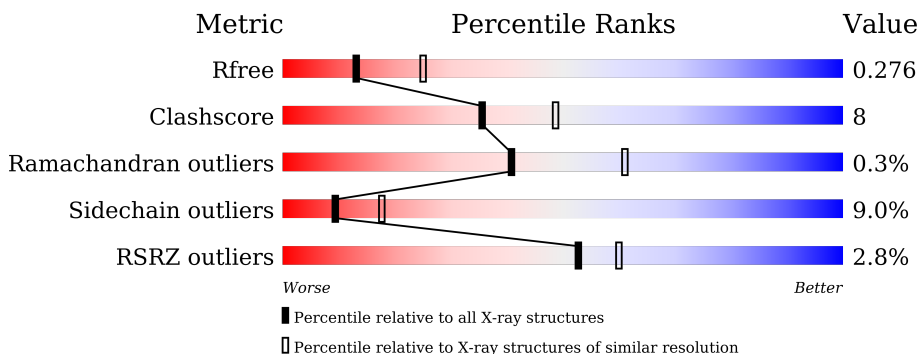
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.73 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1271 (2.76-2.72)
Clashscore	141614	1322 (2.76-2.72)
Ramachandran outliers	138981	1297 (2.76-2.72)
Sidechain outliers	138945	1298 (2.76-2.72)
RSRZ outliers	127900	1243 (2.76-2.72)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	410	 2% 68% 11% • 19%
1	B	410	 2% 66% 13% • 20%
1	C	410	 2% 64% 15% • 19%
1	D	410	 4% 65% 14% • 20%
1	E	410	 2% 63% 14% • 20%
1	F	410	 4% 61% 17% • 19%

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	GOL	A	503	-	-	-	X
2	GOL	B	501	-	-	X	X
2	GOL	C	502	-	-	-	X
2	GOL	D	501	-	-	X	-
2	GOL	E	501	-	-	-	X
2	GOL	E	502	-	-	X	X
3	NA	A	509	-	-	-	X
3	NA	A	510	-	-	-	X
3	NA	B	509	-	-	-	X
3	NA	C	504	-	-	-	X
4	FMT	A	512	-	-	X	-
4	FMT	B	514	-	-	-	X
4	FMT	C	513	-	-	X	X
4	FMT	E	510	-	-	X	-
4	FMT	F	510	-	-	X	-
5	BME	C	517	-	-	X	-
5	BME	C	518	-	-	-	X
5	BME	E	517	-	-	-	X

2 Entry composition [i](#)

There are 7 unique types of molecules in this entry. The entry contains 16510 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Ubiquitin carboxyl-terminal hydrolase 14.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	331	Total 2665	C 1701	N 445	O 501	S 18	0	0	0
1	B	330	Total 2651	C 1694	N 443	O 496	S 18	0	0	0
1	C	333	Total 2682	C 1714	N 444	O 505	S 19	0	0	0
1	D	329	Total 2646	C 1686	N 440	O 502	S 18	0	0	0
1	E	328	Total 2630	C 1681	N 441	O 490	S 18	0	0	0
1	F	331	Total 2651	C 1690	N 444	O 499	S 18	0	0	0

There are 156 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	76	HIS	-	expression tag	UNP P54578
A	77	HIS	-	expression tag	UNP P54578
A	78	HIS	-	expression tag	UNP P54578
A	79	HIS	-	expression tag	UNP P54578
A	80	HIS	-	expression tag	UNP P54578
A	81	HIS	-	expression tag	UNP P54578
A	82	SER	-	expression tag	UNP P54578
A	83	SER	-	expression tag	UNP P54578
A	84	GLY	-	expression tag	UNP P54578
A	85	LEU	-	expression tag	UNP P54578
A	86	VAL	-	expression tag	UNP P54578
A	87	PRO	-	expression tag	UNP P54578
A	88	ARG	-	expression tag	UNP P54578
A	89	GLY	-	expression tag	UNP P54578
A	90	SER	-	expression tag	UNP P54578
A	91	HIS	-	expression tag	UNP P54578
A	114	SER	CYS	engineered mutation	UNP P54578

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Chain	Residue	Modelled	Actual	Comment	Reference
A	?	-	VAL	deletion	UNP P54578
A	?	-	LYS	deletion	UNP P54578
A	?	-	GLU	deletion	UNP P54578
A	?	-	THR	deletion	UNP P54578
A	?	-	ASP	deletion	UNP P54578
A	?	-	SER	deletion	UNP P54578
A	?	-	SER	deletion	UNP P54578
A	?	-	SER	deletion	UNP P54578
A	?	-	ALA	deletion	UNP P54578
B	76	HIS	-	expression tag	UNP P54578
B	77	HIS	-	expression tag	UNP P54578
B	78	HIS	-	expression tag	UNP P54578
B	79	HIS	-	expression tag	UNP P54578
B	80	HIS	-	expression tag	UNP P54578
B	81	HIS	-	expression tag	UNP P54578
B	82	SER	-	expression tag	UNP P54578
B	83	SER	-	expression tag	UNP P54578
B	84	GLY	-	expression tag	UNP P54578
B	85	LEU	-	expression tag	UNP P54578
B	86	VAL	-	expression tag	UNP P54578
B	87	PRO	-	expression tag	UNP P54578
B	88	ARG	-	expression tag	UNP P54578
B	89	GLY	-	expression tag	UNP P54578
B	90	SER	-	expression tag	UNP P54578
B	91	HIS	-	expression tag	UNP P54578
B	114	SER	CYS	engineered mutation	UNP P54578
B	?	-	VAL	deletion	UNP P54578
B	?	-	LYS	deletion	UNP P54578
B	?	-	GLU	deletion	UNP P54578
B	?	-	THR	deletion	UNP P54578
B	?	-	ASP	deletion	UNP P54578
B	?	-	SER	deletion	UNP P54578
B	?	-	SER	deletion	UNP P54578
B	?	-	SER	deletion	UNP P54578
B	?	-	ALA	deletion	UNP P54578
C	76	HIS	-	expression tag	UNP P54578
C	77	HIS	-	expression tag	UNP P54578
C	78	HIS	-	expression tag	UNP P54578
C	79	HIS	-	expression tag	UNP P54578
C	80	HIS	-	expression tag	UNP P54578
C	81	HIS	-	expression tag	UNP P54578
C	82	SER	-	expression tag	UNP P54578

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Chain	Residue	Modelled	Actual	Comment	Reference
C	83	SER	-	expression tag	UNP P54578
C	84	GLY	-	expression tag	UNP P54578
C	85	LEU	-	expression tag	UNP P54578
C	86	VAL	-	expression tag	UNP P54578
C	87	PRO	-	expression tag	UNP P54578
C	88	ARG	-	expression tag	UNP P54578
C	89	GLY	-	expression tag	UNP P54578
C	90	SER	-	expression tag	UNP P54578
C	91	HIS	-	expression tag	UNP P54578
C	114	SER	CYS	engineered mutation	UNP P54578
C	?	-	VAL	deletion	UNP P54578
C	?	-	LYS	deletion	UNP P54578
C	?	-	GLU	deletion	UNP P54578
C	?	-	THR	deletion	UNP P54578
C	?	-	ASP	deletion	UNP P54578
C	?	-	SER	deletion	UNP P54578
C	?	-	SER	deletion	UNP P54578
C	?	-	SER	deletion	UNP P54578
C	?	-	ALA	deletion	UNP P54578
D	76	HIS	-	expression tag	UNP P54578
D	77	HIS	-	expression tag	UNP P54578
D	78	HIS	-	expression tag	UNP P54578
D	79	HIS	-	expression tag	UNP P54578
D	80	HIS	-	expression tag	UNP P54578
D	81	HIS	-	expression tag	UNP P54578
D	82	SER	-	expression tag	UNP P54578
D	83	SER	-	expression tag	UNP P54578
D	84	GLY	-	expression tag	UNP P54578
D	85	LEU	-	expression tag	UNP P54578
D	86	VAL	-	expression tag	UNP P54578
D	87	PRO	-	expression tag	UNP P54578
D	88	ARG	-	expression tag	UNP P54578
D	89	GLY	-	expression tag	UNP P54578
D	90	SER	-	expression tag	UNP P54578
D	91	HIS	-	expression tag	UNP P54578
D	114	SER	CYS	engineered mutation	UNP P54578
D	?	-	VAL	deletion	UNP P54578
D	?	-	LYS	deletion	UNP P54578
D	?	-	GLU	deletion	UNP P54578
D	?	-	THR	deletion	UNP P54578
D	?	-	ASP	deletion	UNP P54578
D	?	-	SER	deletion	UNP P54578

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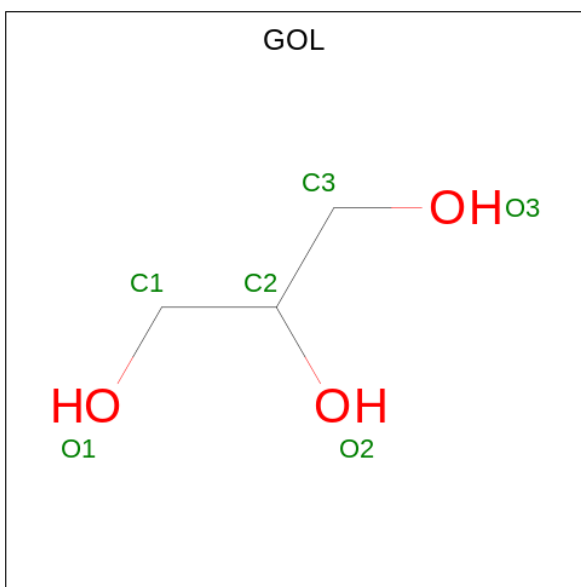
Chain	Residue	Modelled	Actual	Comment	Reference
D	?	-	SER	deletion	UNP P54578
D	?	-	SER	deletion	UNP P54578
D	?	-	ALA	deletion	UNP P54578
E	76	HIS	-	expression tag	UNP P54578
E	77	HIS	-	expression tag	UNP P54578
E	78	HIS	-	expression tag	UNP P54578
E	79	HIS	-	expression tag	UNP P54578
E	80	HIS	-	expression tag	UNP P54578
E	81	HIS	-	expression tag	UNP P54578
E	82	SER	-	expression tag	UNP P54578
E	83	SER	-	expression tag	UNP P54578
E	84	GLY	-	expression tag	UNP P54578
E	85	LEU	-	expression tag	UNP P54578
E	86	VAL	-	expression tag	UNP P54578
E	87	PRO	-	expression tag	UNP P54578
E	88	ARG	-	expression tag	UNP P54578
E	89	GLY	-	expression tag	UNP P54578
E	90	SER	-	expression tag	UNP P54578
E	91	HIS	-	expression tag	UNP P54578
E	114	SER	CYS	engineered mutation	UNP P54578
E	?	-	VAL	deletion	UNP P54578
E	?	-	LYS	deletion	UNP P54578
E	?	-	GLU	deletion	UNP P54578
E	?	-	THR	deletion	UNP P54578
E	?	-	ASP	deletion	UNP P54578
E	?	-	SER	deletion	UNP P54578
E	?	-	SER	deletion	UNP P54578
E	?	-	SER	deletion	UNP P54578
E	?	-	ALA	deletion	UNP P54578
F	76	HIS	-	expression tag	UNP P54578
F	77	HIS	-	expression tag	UNP P54578
F	78	HIS	-	expression tag	UNP P54578
F	79	HIS	-	expression tag	UNP P54578
F	80	HIS	-	expression tag	UNP P54578
F	81	HIS	-	expression tag	UNP P54578
F	82	SER	-	expression tag	UNP P54578
F	83	SER	-	expression tag	UNP P54578
F	84	GLY	-	expression tag	UNP P54578
F	85	LEU	-	expression tag	UNP P54578
F	86	VAL	-	expression tag	UNP P54578
F	87	PRO	-	expression tag	UNP P54578
F	88	ARG	-	expression tag	UNP P54578

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Chain	Residue	Modelled	Actual	Comment	Reference
F	89	GLY	-	expression tag	UNP P54578
F	90	SER	-	expression tag	UNP P54578
F	91	HIS	-	expression tag	UNP P54578
F	114	SER	CYS	engineered mutation	UNP P54578
F	?	-	VAL	deletion	UNP P54578
F	?	-	LYS	deletion	UNP P54578
F	?	-	GLU	deletion	UNP P54578
F	?	-	THR	deletion	UNP P54578
F	?	-	ASP	deletion	UNP P54578
F	?	-	SER	deletion	UNP P54578
F	?	-	SER	deletion	UNP P54578
F	?	-	SER	deletion	UNP P54578
F	?	-	SER	deletion	UNP P54578
F	?	-	ALA	deletion	UNP P54578

- Molecule 2 is GLYCEROL (three-letter code: GOL) (formula: C₃H₈O₃).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
			Total	C	O		
2	A	1	6	3	3	0	0
2	A	1	6	3	3	0	0
2	A	1	6	3	3	0	0
2	B	1	6	3	3	0	0
2	B	1	6	3	3	0	0

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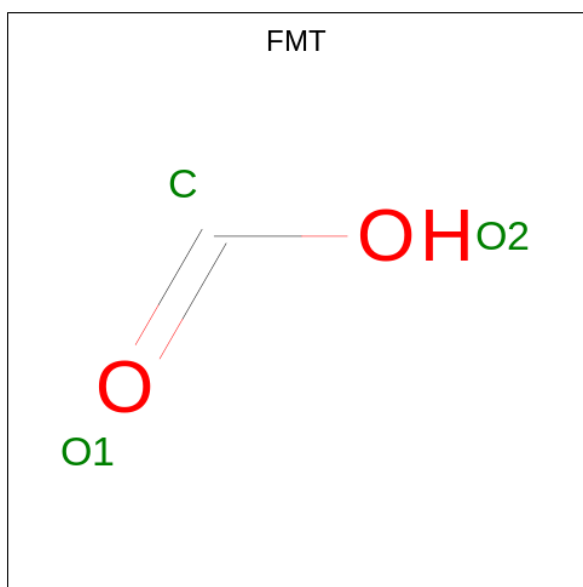
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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	B	1	Total	C	O	0	0
			6	3	3		
2	C	1	Total	C	O	0	0
			6	3	3		
2	C	1	Total	C	O	0	0
			6	3	3		
2	D	1	Total	C	O	0	0
			6	3	3		
2	D	1	Total	C	O	0	0
			6	3	3		
2	E	1	Total	C	O	0	0
			6	3	3		
2	E	1	Total	C	O	0	0
			6	3	3		

- Molecule 3 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	7	Total	Na	0	0
			7	7		
3	B	8	Total	Na	0	0
			8	8		
3	C	8	Total	Na	0	0
			8	8		
3	D	5	Total	Na	0	0
			5	5		
3	E	7	Total	Na	0	0
			7	7		
3	F	6	Total	Na	0	0
			6	6		

- Molecule 4 is FORMIC ACID (three-letter code: FMT) (formula: CH₂O₂).



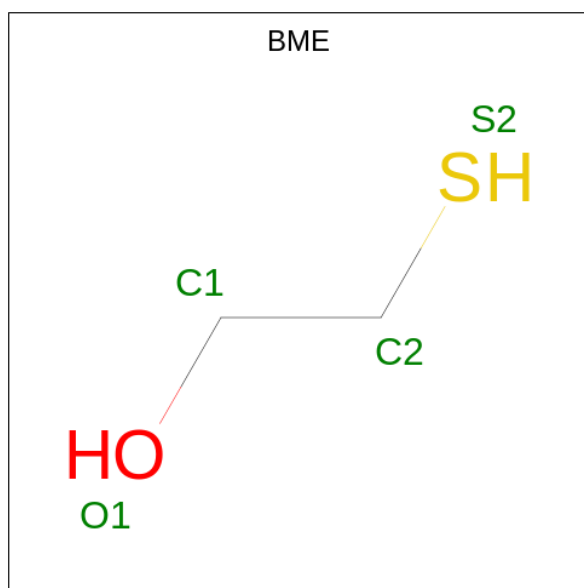
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total C O 3 1 2	0	0
4	A	1	Total C O 3 1 2	0	0
4	B	1	Total C O 3 1 2	0	0
4	B	1	Total C O 3 1 2	0	0
4	B	1	Total C O 3 1 2	0	0
4	B	1	Total C O 3 1 2	0	0
4	B	1	Total C O 3 1 2	0	0
4	B	1	Total C O 3 1 2	0	0
4	B	1	Total C O 3 1 2	0	0
4	B	1	Total C O 3 1 2	0	0
4	C	1	Total C O 3 1 2	0	0
4	C	1	Total C O 3 1 2	0	0
4	C	1	Total C O 3 1 2	0	0
4	C	1	Total C O 3 1 2	0	0
4	C	1	Total C O 3 1 2	0	0

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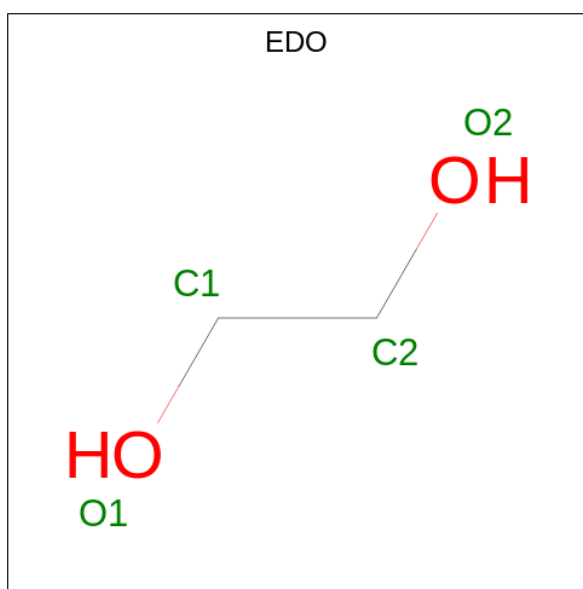
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	C	1	Total C O 3 1 2	0	0
4	D	1	Total C O 3 1 2	0	0
4	D	1	Total C O 3 1 2	0	0
4	E	1	Total C O 3 1 2	0	0
4	E	1	Total C O 3 1 2	0	0
4	E	1	Total C O 3 1 2	0	0
4	E	1	Total C O 3 1 2	0	0
4	E	1	Total C O 3 1 2	0	0
4	F	1	Total C O 3 1 2	0	0
4	F	1	Total C O 3 1 2	0	0
4	F	1	Total C O 3 1 2	0	0
4	F	1	Total C O 3 1 2	0	0

- Molecule 5 is BETA-MERCAPTOETHANOL (three-letter code: BME) (formula: C₂H₆OS).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
5	A	1	Total	C	O	S	0	0
			4	2	1	1		
5	B	1	Total	C	O	S	0	0
			4	2	1	1		
5	B	1	Total	C	O	S	0	0
			4	2	1	1		
5	C	1	Total	C	O	S	0	0
			4	2	1	1		
5	C	1	Total	C	O	S	0	0
			4	2	1	1		
5	E	1	Total	C	O	S	0	0
			4	2	1	1		
5	E	1	Total	C	O	S	0	0
			4	2	1	1		
5	E	1	Total	C	O	S	0	0
			4	2	1	1		
5	F	1	Total	C	O	S	0	0
			4	2	1	1		

- Molecule 6 is 1,2-ETHANEDIOL (three-letter code: EDO) (formula: C₂H₆O₂).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	E	1	Total	C	O	0	0
			4	2	2		

- Molecule 7 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	A	27	Total O 27 27	0	0
7	B	52	Total O 52 52	0	0
7	C	98	Total O 98 98	0	0
7	D	40	Total O 40 40	0	0
7	E	109	Total O 109 109	0	0
7	F	28	Total O 28 28	0	0

4 Data and refinement statistics i

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	82.51Å 160.42Å 90.31Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	28.49 – 2.73 28.47 – 2.73	Depositor EDS
% Data completeness (in resolution range)	98.0 (28.49-2.73) 98.1 (28.47-2.73)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.84 (at 2.72Å)	Xtrriage
Refinement program	REFMAC 5.8.0238	Depositor
R, R_{free}	0.197 , 0.277 0.199 , 0.276	Depositor DCC
R_{free} test set	3065 reflections (5.02%)	wwPDB-VP
Wilson B-factor (Å ²)	44.0	Xtrriage
Anisotropy	0.046	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 14.5	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.34$	Xtrriage
Estimated twinning fraction	0.459 for h,-k,-l	Xtrriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	16510	wwPDB-VP
Average B, all atoms (Å ²)	50.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.55% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality i

5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: FMT, GOL, BME, NA, EDO

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.65	0/2716	0.75	0/3658
1	B	0.64	0/2702	0.75	0/3640
1	C	0.65	0/2734	0.75	0/3682
1	D	0.66	0/2696	0.74	0/3631
1	E	0.65	0/2680	0.76	0/3608
1	F	0.66	0/2702	0.77	0/3640
All	All	0.65	0/16230	0.75	0/21859

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts i

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2665	0	2650	38	0
1	B	2651	0	2634	43	0
1	C	2682	0	2664	42	0
1	D	2646	0	2625	36	0
1	E	2630	0	2618	63	0
1	F	2651	0	2622	38	0
2	A	18	0	24	8	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	B	18	0	24	6	0
2	C	12	0	16	0	0
2	D	12	0	16	4	0
2	E	12	0	16	16	0
3	A	7	0	0	0	0
3	B	8	0	0	1	0
3	C	8	0	0	0	0
3	D	5	0	0	0	0
3	E	7	0	0	0	0
3	F	6	0	0	0	0
4	A	6	0	2	3	0
4	B	21	0	7	5	0
4	C	18	0	6	3	0
4	D	6	0	2	2	0
4	E	15	0	5	3	0
4	F	12	0	4	5	0
5	A	4	0	6	2	0
5	B	8	0	12	0	0
5	C	8	0	12	6	0
5	E	12	0	18	3	0
5	F	4	0	6	0	0
6	E	4	0	6	3	0
7	A	27	0	0	2	0
7	B	52	0	0	4	0
7	C	98	0	0	5	0
7	D	40	0	0	3	0
7	E	109	0	0	9	0
7	F	28	0	0	1	0
All	All	16510	0	15995	260	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 8.

All (260) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:180:HIS:CE1	2:E:502:GOL:H31	1.88	1.07
1:E:180:HIS:HE1	2:E:502:GOL:H31	0.96	1.06
1:E:180:HIS:HE1	2:E:502:GOL:C3	1.74	1.01
1:D:217:ALA:HB2	1:D:241:SER:HB3	1.41	0.99
1:C:217:ALA:HB2	1:C:241:SER:HB3	1.48	0.96

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:201:ASN:HD21	1:F:274:GLN:NE2	1.66	0.93
1:F:201:ASN:HD21	1:F:274:GLN:HE22	0.94	0.93
1:E:201:ASN:HD21	1:E:274:GLN:HE22	1.10	0.92
1:E:113:THR:HG22	2:E:502:GOL:O2	1.68	0.92
1:C:207:MET:SD	7:C:686:HOH:O	2.27	0.92
1:E:201:ASN:HD21	1:E:274:GLN:NE2	1.68	0.90
1:B:426:HIS:CD2	7:B:601:HOH:O	2.23	0.90
1:C:277:CYS:SG	7:C:634:HOH:O	2.30	0.88
1:B:323:TYR:HE1	1:B:421:GLN:HE22	1.21	0.86
1:E:113:THR:HG22	2:E:502:GOL:C2	2.06	0.84
1:F:201:ASN:ND2	1:F:274:GLN:HE22	1.76	0.83
1:D:323:TYR:HE1	1:D:421:GLN:HE22	1.27	0.79
1:C:115:TYR:OH	5:C:517:BME:S2	2.40	0.78
1:E:180:HIS:CE1	2:E:502:GOL:C3	2.59	0.78
1:A:323:TYR:HE1	1:A:421:GLN:HE22	1.30	0.78
1:A:425:THR:HG23	1:A:473:HIS:ND1	2.00	0.76
1:A:413:ASN:HD22	1:A:416:GLY:H	1.34	0.75
1:F:414:ASN:HD22	1:F:415:CYS:N	1.84	0.74
1:E:201:ASN:ND2	1:E:274:GLN:HE22	1.83	0.72
1:E:273:LEU:HD22	7:E:666:HOH:O	1.88	0.72
1:B:413:ASN:ND2	1:B:416:GLY:H	1.87	0.72
1:C:201:ASN:HD21	1:C:274:GLN:NE2	1.87	0.72
1:C:203:CYS:SG	7:C:686:HOH:O	2.47	0.72
1:C:330:ARG:NH2	1:C:345:LYS:O	2.22	0.72
1:C:201:ASN:HD21	1:C:274:GLN:HE22	1.36	0.72
1:E:414:ASN:HD22	1:E:415:CYS:N	1.87	0.71
1:C:206:GLN:HA	1:C:206:GLN:HE21	1.56	0.69
1:C:425:THR:HG23	1:C:473:HIS:ND1	2.07	0.69
1:B:435:HIS:C	7:B:601:HOH:O	2.30	0.69
1:C:180:HIS:HE1	5:C:517:BME:S2	2.15	0.69
1:C:124:ARG:NH2	4:C:513:FMT:O1	2.26	0.69
1:C:162:SER:O	1:C:166:THR:HG22	1.92	0.68
1:B:189:LYS:HD3	7:B:611:HOH:O	1.93	0.68
1:A:413:ASN:ND2	1:A:416:GLY:H	1.91	0.68
1:B:421:GLN:HE21	1:B:481:GLY:HA3	1.58	0.67
1:E:176:LEU:HD11	2:E:502:GOL:O2	1.95	0.66
1:F:258:THR:HB	1:F:310:LEU:O	1.97	0.65
1:E:323:TYR:HE2	1:E:421:GLN:HE22	1.44	0.64
1:A:121:GLN:HG3	4:A:512:FMT:H	1.81	0.63
1:E:185:GLN:H	1:E:185:GLN:HE21	1.46	0.63
1:F:263:GLU:HB3	1:F:304:THR:OG1	1.98	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:413:ASN:HD22	1:B:416:GLY:H	1.44	0.63
1:F:351:LEU:HD13	1:F:464:LEU:HD21	1.81	0.63
1:E:113:THR:HG22	2:E:502:GOL:C1	2.29	0.62
1:E:195:TYR:HB3	2:E:502:GOL:O1	2.00	0.62
1:A:319:ARG:HD3	1:A:409:ASP:OD2	2.00	0.62
1:F:123:ILE:HG23	1:F:129:LEU:CD2	2.29	0.62
1:D:185:GLN:H	1:D:185:GLN:HE21	1.46	0.62
1:D:330:ARG:NH2	1:D:345:LYS:O	2.33	0.62
1:F:330:ARG:NH2	1:F:345:LYS:O	2.33	0.62
1:C:123:ILE:HG23	1:C:129:LEU:HD23	1.82	0.61
1:B:185:GLN:H	1:B:185:GLN:HE21	1.47	0.61
1:E:123:ILE:HG23	1:E:129:LEU:CD2	2.30	0.60
1:E:172:PRO:HA	5:E:516:BME:C2	2.31	0.60
1:A:123:ILE:HG23	1:A:129:LEU:CD2	2.31	0.60
1:C:425:THR:CG2	1:C:473:HIS:ND1	2.64	0.60
1:B:195:TYR:HA	7:B:611:HOH:O	2.01	0.60
1:D:206:GLN:HE21	1:D:206:GLN:HA	1.67	0.60
1:E:176:LEU:CD1	2:E:502:GOL:O2	2.49	0.60
1:B:319:ARG:HD3	1:B:409:ASP:OD2	2.01	0.60
3:B:506:NA:NA	4:B:515:FMT:O1	1.75	0.59
1:A:176:LEU:HD11	2:A:501:GOL:H32	1.83	0.59
1:A:185:GLN:H	1:A:185:GLN:HE21	1.49	0.59
1:E:247:PHE:HB2	7:E:666:HOH:O	2.03	0.59
1:B:425:THR:CG2	1:B:473:HIS:ND1	2.66	0.59
1:B:425:THR:HG23	1:B:473:HIS:ND1	2.19	0.58
1:F:323:TYR:HE2	1:F:421:GLN:HE22	1.50	0.58
1:D:427:GLN:NE2	1:D:472:TRP:HA	2.19	0.57
1:D:453:ASP:OD1	1:D:453:ASP:N	2.38	0.57
1:F:458:VAL:HG13	1:F:462:ASP:HB2	1.87	0.57
1:D:117:ASN:HB3	2:D:501:GOL:H2	1.86	0.57
1:F:262:GLU:H	1:F:262:GLU:CD	1.99	0.57
1:E:413:ASN:HD22	1:E:416:GLY:H	1.52	0.57
1:B:458:VAL:HG13	1:B:462:ASP:HB2	1.86	0.56
1:C:450:PHE:HB3	4:C:512:FMT:C	2.34	0.56
1:E:330:ARG:NH2	1:E:345:LYS:O	2.37	0.56
1:E:247:PHE:CB	7:E:666:HOH:O	2.52	0.56
1:D:402:GLU:OE2	1:D:402:GLU:N	2.39	0.56
1:B:351:LEU:HD13	1:B:464:LEU:HD21	1.88	0.55
1:A:425:THR:CG2	1:A:473:HIS:ND1	2.68	0.55
1:E:173:ILE:HG13	7:E:688:HOH:O	2.07	0.55
1:E:424:LEU:HD22	7:E:672:HOH:O	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:415:CYS:SG	1:D:417:TYR:HB2	2.47	0.55
1:B:285:TYR:HB3	4:B:518:FMT:H	1.88	0.55
1:F:152:ILE:HD11	1:F:182:ALA:CB	2.37	0.55
1:B:180:HIS:HE1	2:B:501:GOL:O3	1.89	0.54
1:B:273:LEU:O	4:B:513:FMT:C	2.55	0.54
1:D:371:ARG:HD2	1:D:415:CYS:O	2.07	0.54
1:D:438:SER:N	2:D:501:GOL:O1	2.40	0.54
1:E:447:TRP:CD2	1:E:463:ILE:HG13	2.43	0.54
1:D:418:TYR:HB3	1:D:480:TYR:HB3	1.90	0.53
1:A:275:LEU:O	1:A:326:ILE:HA	2.09	0.53
1:C:185:GLN:H	1:C:185:GLN:HE21	1.54	0.53
1:A:109:ASN:HD21	2:A:502:GOL:H2	1.74	0.53
1:E:152:ILE:HD11	1:E:182:ALA:CB	2.39	0.53
1:C:201:ASN:ND2	1:C:274:GLN:HE22	2.05	0.53
1:C:157:ARG:O	5:C:518:BME:H12	2.09	0.52
1:B:180:HIS:CE1	2:B:501:GOL:C3	2.92	0.52
1:E:174:ILE:HD12	1:E:178:PHE:CE2	2.45	0.52
1:A:201:ASN:HD21	1:A:274:GLN:NE2	2.08	0.52
1:B:201:ASN:HD21	1:B:274:GLN:NE2	2.08	0.52
1:A:273:LEU:O	4:A:511:FMT:C	2.57	0.52
1:A:413:ASN:ND2	1:A:416:GLY:N	2.58	0.52
1:A:306:GLN:HG2	7:A:607:HOH:O	2.09	0.51
1:C:415:CYS:SG	1:C:417:TYR:HB2	2.50	0.51
1:E:109:ASN:HD21	4:E:510:FMT:C	2.23	0.51
1:D:175:LEU:HB2	7:D:609:HOH:O	2.11	0.51
1:E:176:LEU:HD11	2:E:502:GOL:C2	2.40	0.51
1:A:132:ALA:CB	1:A:242:LEU:HD22	2.41	0.51
1:B:123:ILE:HG23	1:B:129:LEU:HD23	1.92	0.51
1:B:180:HIS:CE1	2:B:501:GOL:O3	2.64	0.51
1:A:109:ASN:ND2	2:A:502:GOL:H2	2.26	0.51
1:D:217:ALA:CB	1:D:241:SER:HB3	2.28	0.51
1:A:421:GLN:HE21	1:A:481:GLY:HA3	1.76	0.51
1:E:333:TYR:CD1	6:E:518:EDO:C1	2.94	0.51
1:A:458:VAL:HG13	1:A:462:ASP:HB2	1.93	0.50
1:E:130:LYS:HB3	2:E:501:GOL:H11	1.93	0.50
1:E:424:LEU:HA	7:E:672:HOH:O	2.11	0.50
1:D:206:GLN:HA	1:D:206:GLN:NE2	2.26	0.50
1:C:414:ASN:HD22	1:C:415:CYS:N	2.09	0.50
1:D:128:GLU:OE2	1:D:323:TYR:OH	2.24	0.50
1:A:453:ASP:OD1	1:A:453:ASP:N	2.36	0.50
1:E:121:GLN:HE21	1:E:121:GLN:HA	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:273:LEU:HB3	7:E:666:HOH:O	2.12	0.50
1:B:132:ALA:CB	1:B:242:LEU:HD22	2.41	0.49
1:E:180:HIS:CE1	2:E:502:GOL:H32	2.46	0.49
1:A:474:ILE:O	5:A:513:BME:S2	2.70	0.49
1:A:421:GLN:NE2	1:A:481:GLY:HA3	2.27	0.49
1:B:180:HIS:HE1	2:B:501:GOL:C3	2.25	0.49
1:D:414:ASN:C	1:D:414:ASN:HD22	2.15	0.49
1:D:425:THR:HB	1:D:439:TRP:HE1	1.77	0.49
1:D:433:SER:OG	1:D:434:GLY:N	2.46	0.49
1:E:255:MET:HB2	1:E:266:THR:HG23	1.95	0.49
1:C:433:SER:OG	1:C:434:GLY:N	2.46	0.49
1:D:414:ASN:HD22	1:D:415:CYS:N	2.11	0.49
1:F:185:GLN:H	1:F:185:GLN:HE21	1.61	0.48
1:B:201:ASN:HD21	1:B:274:GLN:HE22	1.60	0.48
1:B:414:ASN:C	1:B:414:ASN:HD22	2.16	0.48
1:F:194:GLN:H	1:F:194:GLN:HE21	1.61	0.48
1:E:172:PRO:HA	5:E:516:BME:H21	1.95	0.48
1:E:370:PHE:CD1	1:E:370:PHE:N	2.82	0.48
1:B:197:GLN:OE1	1:B:433:SER:C	2.52	0.48
1:F:194:GLN:H	1:F:194:GLN:NE2	2.13	0.47
1:D:109:ASN:HD21	4:D:508:FMT:C	2.27	0.47
1:A:112:ASN:OD1	2:A:502:GOL:H11	2.15	0.47
1:C:371:ARG:HD2	1:C:415:CYS:O	2.14	0.47
1:B:121:GLN:HG3	4:B:514:FMT:C	2.44	0.47
1:C:418:TYR:HB3	1:C:480:TYR:HB3	1.95	0.47
1:F:180:HIS:HE1	4:F:510:FMT:O2	1.97	0.47
1:F:447:TRP:CD2	1:F:463:ILE:HG13	2.49	0.47
2:A:503:GOL:O3	1:C:313:LYS:NZ	2.37	0.47
1:C:180:HIS:CE1	5:C:517:BME:S2	3.04	0.47
1:C:197:GLN:HG2	1:C:433:SER:O	2.15	0.47
1:B:421:GLN:NE2	1:B:481:GLY:HA3	2.28	0.47
1:E:458:VAL:HG13	1:E:462:ASP:HB2	1.95	0.47
1:C:206:GLN:HA	1:C:206:GLN:NE2	2.26	0.47
1:D:150:GLN:NE2	7:D:601:HOH:O	2.47	0.47
1:D:337:GLU:HB2	1:D:339:VAL:HG12	1.98	0.46
1:D:123:ILE:HG23	1:D:129:LEU:HD23	1.97	0.46
1:E:422:ALA:HA	1:E:439:TRP:O	2.15	0.46
1:B:275:LEU:O	1:B:326:ILE:HA	2.16	0.46
1:F:192:GLN:H	1:F:194:GLN:HE22	1.64	0.46
1:A:168:SER:O	1:A:169:SER:HB3	2.16	0.46
1:B:112:ASN:HB2	2:B:501:GOL:O1	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:433:SER:OG	1:E:434:GLY:N	2.49	0.46
1:C:413:ASN:ND2	1:C:416:GLY:H	2.14	0.46
1:A:331:PHE:CZ	5:A:513:BME:H12	2.51	0.45
1:C:413:ASN:ND2	1:C:416:GLY:N	2.64	0.45
1:F:115:TYR:OH	4:F:510:FMT:O1	2.25	0.45
1:F:422:ALA:HA	1:F:439:TRP:O	2.16	0.45
1:E:113:THR:HG22	2:E:502:GOL:H12	1.98	0.45
1:F:371:ARG:NH1	1:F:415:CYS:O	2.49	0.45
1:F:365:GLU:O	1:F:368:VAL:HG22	2.17	0.45
1:A:162:SER:O	1:A:166:THR:HG23	2.16	0.45
1:D:263:GLU:OE2	1:D:304:THR:OG1	2.32	0.45
1:F:273:LEU:HB2	4:F:508:FMT:C	2.46	0.45
1:F:348:LYS:NZ	1:F:467:SER:CB	2.80	0.45
1:E:113:THR:CG2	2:E:502:GOL:H12	2.46	0.45
1:A:429:ARG:NH2	7:A:602:HOH:O	2.46	0.45
1:C:427:GLN:HG2	7:C:680:HOH:O	2.16	0.45
1:E:123:ILE:HG23	1:E:129:LEU:HD23	1.98	0.45
1:A:111:GLY:O	2:A:501:GOL:H12	2.17	0.45
1:B:123:ILE:HG23	1:B:129:LEU:CD2	2.46	0.44
1:F:180:HIS:HE1	4:F:510:FMT:C	2.31	0.44
1:E:462:ASP:OD1	1:E:465:ARG:NH2	2.49	0.44
1:F:149:ALA:HA	1:F:210:VAL:HG13	2.00	0.44
1:E:333:TYR:CD1	6:E:518:EDO:H11	2.53	0.44
1:E:172:PRO:HA	5:E:516:BME:H22	1.99	0.44
1:E:438:SER:OG	1:E:450:PHE:HB2	2.18	0.44
1:F:109:ASN:HD21	4:F:507:FMT:C	2.30	0.44
1:F:348:LYS:HZ2	1:F:467:SER:CB	2.30	0.44
1:D:118:ALA:HA	2:D:501:GOL:H11	2.00	0.44
1:E:205:ILE:O	1:E:209:ARG:HD2	2.17	0.43
1:F:323:TYR:HE2	1:F:421:GLN:NE2	2.13	0.43
1:D:129:LEU:HD12	1:D:129:LEU:HA	1.91	0.43
1:B:414:ASN:HD22	1:B:415:CYS:N	2.17	0.43
1:E:373:LYS:HE2	1:E:483:ARG:CD	2.47	0.43
1:A:414:ASN:C	1:A:414:ASN:HD22	2.22	0.43
1:C:414:ASN:HD22	1:C:414:ASN:C	2.22	0.43
1:D:174:ILE:HG13	4:D:509:FMT:C	2.48	0.43
1:D:201:ASN:HD21	1:D:274:GLN:NE2	2.16	0.43
4:C:513:FMT:H	5:C:518:BME:S2	2.59	0.43
1:D:425:THR:CG2	1:D:473:HIS:ND1	2.81	0.43
1:F:433:SER:OG	1:F:434:GLY:N	2.52	0.43
1:A:201:ASN:HD21	1:A:274:GLN:HE22	1.66	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:125:SER:O	1:C:127:PRO:HD3	2.19	0.42
1:E:174:ILE:HD12	1:E:178:PHE:CD2	2.54	0.42
1:A:121:GLN:HG3	4:A:512:FMT:C	2.48	0.42
1:A:425:THR:HG22	1:A:437:VAL:HB	2.00	0.42
1:D:450:PHE:CB	2:D:501:GOL:H12	2.49	0.42
1:B:134:LYS:HE3	4:B:516:FMT:C	2.50	0.42
1:C:194:GLN:H	1:C:194:GLN:NE2	2.17	0.42
1:F:307:ARG:NH2	7:F:602:HOH:O	2.51	0.42
1:D:197:GLN:HG2	1:D:433:SER:O	2.20	0.42
1:F:278:PHE:C	1:F:279:ILE:HG13	2.40	0.42
1:C:148:SER:HB3	1:C:182:ALA:HB2	2.02	0.42
1:E:176:LEU:HD23	7:E:688:HOH:O	2.20	0.42
1:E:205:ILE:HD11	1:E:274:GLN:OE1	2.19	0.42
1:E:247:PHE:HB3	7:E:666:HOH:O	2.19	0.42
1:B:124:ARG:NH2	1:B:164:ASP:OD1	2.53	0.42
1:C:195:TYR:HB3	5:C:517:BME:C2	2.50	0.42
1:D:201:ASN:HD21	1:D:274:GLN:HE22	1.68	0.42
1:A:298:ILE:HG23	1:C:298:ILE:HG23	2.02	0.41
1:B:447:TRP:CD2	1:B:463:ILE:HG13	2.55	0.41
1:B:422:ALA:HA	1:B:439:TRP:O	2.20	0.41
1:E:333:TYR:CD1	6:E:518:EDO:H12	2.55	0.41
1:A:196:LEU:O	2:A:501:GOL:O1	2.38	0.41
1:B:112:ASN:CG	1:B:197:GLN:HE21	2.24	0.41
1:E:425:THR:CG2	1:E:473:HIS:ND1	2.84	0.41
1:C:140:LEU:HD21	1:C:178:PHE:CE2	2.56	0.41
1:D:148:SER:HB3	1:D:182:ALA:HB2	2.02	0.41
1:E:189:LYS:H	4:E:514:FMT:C	2.30	0.41
1:F:299:THR:HA	1:F:309:ALA:O	2.21	0.41
1:E:327:GLN:HE21	1:E:327:GLN:HB3	1.65	0.41
1:B:195:TYR:HB3	2:B:501:GOL:O2	2.21	0.41
1:F:348:LYS:NZ	1:F:467:SER:HB2	2.34	0.41
1:A:414:ASN:HD22	1:A:415:CYS:N	2.19	0.41
1:E:112:ASN:HA	4:E:510:FMT:C	2.51	0.41
1:F:445:ASP:HA	1:F:460:PRO:CG	2.50	0.41
1:B:424:LEU:CB	1:B:477:VAL:HB	2.51	0.41
1:B:425:THR:CG2	1:B:473:HIS:HB3	2.51	0.41
1:C:445:ASP:HA	1:C:460:PRO:CG	2.51	0.41
1:F:128:GLU:HG2	1:F:246:PHE:CE2	2.56	0.41
1:C:267:LYS:NZ	7:C:602:HOH:O	2.53	0.40
1:C:287:PHE:HB3	1:E:304:THR:HA	2.04	0.40
1:E:123:ILE:HG23	1:E:129:LEU:HD21	2.01	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:418:TYR:HB3	1:F:480:TYR:HB3	2.02	0.40
1:D:156:LEU:HA	7:D:609:HOH:O	2.22	0.40
2:A:503:GOL:O1	1:C:255:MET:CE	2.69	0.40
1:B:254:THR:HG22	1:B:267:LYS:HG2	2.03	0.40
1:B:327:GLN:HE21	1:B:327:GLN:HB3	1.69	0.40
1:A:206:GLN:NE2	1:A:206:GLN:HA	2.37	0.40
1:A:445:ASP:OD1	1:A:445:ASP:N	2.55	0.40
1:B:413:ASN:ND2	1:B:416:GLY:N	2.64	0.40
1:E:115:TYR:HE1	2:E:502:GOL:H11	1.85	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	323/410 (79%)	305 (94%)	17 (5%)	1 (0%)	41	61
1	B	322/410 (78%)	306 (95%)	16 (5%)	0	100	100
1	C	325/410 (79%)	307 (94%)	18 (6%)	0	100	100
1	D	321/410 (78%)	308 (96%)	13 (4%)	0	100	100
1	E	318/410 (78%)	293 (92%)	23 (7%)	2 (1%)	25	44
1	F	323/410 (79%)	305 (94%)	16 (5%)	2 (1%)	25	44
All	All	1932/2460 (78%)	1824 (94%)	103 (5%)	5 (0%)	41	61

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	F	279	ILE
1	E	373	LYS
1	A	169	SER

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Mol	Chain	Res	Type
1	F	452	ASP
1	E	452	ASP

5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	294/368 (80%)	276 (94%)	18 (6%)	18	32
1	B	291/368 (79%)	268 (92%)	23 (8%)	12	22
1	C	296/368 (80%)	267 (90%)	29 (10%)	8	14
1	D	293/368 (80%)	268 (92%)	25 (8%)	10	20
1	E	288/368 (78%)	263 (91%)	25 (9%)	10	19
1	F	290/368 (79%)	253 (87%)	37 (13%)	4	6
All	All	1752/2208 (79%)	1595 (91%)	157 (9%)	9	18

All (157) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	159	LEU
1	A	165	LYS
1	A	166	THR
1	A	185	GLN
1	A	255	MET
1	A	256	LYS
1	A	319	ARG
1	A	335	GLU
1	A	337	GLU
1	A	351	LEU
1	A	363	LEU
1	A	413	ASN
1	A	414	ASN
1	A	424	LEU
1	A	425	THR
1	A	433	SER

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Mol	Chain	Res	Type
1	A	445	ASP
1	A	479	LEU
1	B	159	LEU
1	B	169	SER
1	B	179	LEU
1	B	185	GLN
1	B	189	LYS
1	B	216	GLU
1	B	256	LYS
1	B	271	ASN
1	B	293	ARG
1	B	305	LEU
1	B	308	ASN
1	B	319	ARG
1	B	334	LYS
1	B	363	LEU
1	B	413	ASN
1	B	414	ASN
1	B	424	LEU
1	B	425	THR
1	B	429	ARG
1	B	433	SER
1	B	458	VAL
1	B	479	LEU
1	B	483	ARG
1	C	161	ASP
1	C	166	THR
1	C	169	SER
1	C	179	LEU
1	C	180	HIS
1	C	185	GLN
1	C	194	GLN
1	C	206	GLN
1	C	216	GLU
1	C	241	SER
1	C	256	LYS
1	C	258	THR
1	C	262	GLU
1	C	269	LYS
1	C	291	LYS
1	C	293	ARG
1	C	305	LEU

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Mol	Chain	Res	Type
1	C	314	SER
1	C	319	ARG
1	C	335	GLU
1	C	363	LEU
1	C	413	ASN
1	C	414	ASN
1	C	424	LEU
1	C	425	THR
1	C	429	ARG
1	C	458	VAL
1	C	479	LEU
1	C	483	ARG
1	D	159	LEU
1	D	167	SER
1	D	169	SER
1	D	185	GLN
1	D	192	GLN
1	D	194	GLN
1	D	216	GLU
1	D	241	SER
1	D	256	LYS
1	D	258	THR
1	D	269	LYS
1	D	293	ARG
1	D	299	THR
1	D	300	LYS
1	D	319	ARG
1	D	337	GLU
1	D	338	SER
1	D	363	LEU
1	D	413	ASN
1	D	414	ASN
1	D	424	LEU
1	D	425	THR
1	D	429	ARG
1	D	456	SER
1	D	479	LEU
1	E	121	GLN
1	E	159	LEU
1	E	174	ILE
1	E	185	GLN
1	E	194	GLN

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Mol	Chain	Res	Type
1	E	240	LYS
1	E	266	THR
1	E	299	THR
1	E	305	LEU
1	E	319	ARG
1	E	327	GLN
1	E	332	PHE
1	E	352	MET
1	E	363	LEU
1	E	365	GLU
1	E	369	SER
1	E	370	PHE
1	E	373	LYS
1	E	414	ASN
1	E	424	LEU
1	E	425	THR
1	E	443	LYS
1	E	456	SER
1	E	458	VAL
1	E	479	LEU
1	F	121	GLN
1	F	125	SER
1	F	145	GLU
1	F	148	SER
1	F	151	TYR
1	F	159	LEU
1	F	185	GLN
1	F	192	GLN
1	F	194	GLN
1	F	209	ARG
1	F	242	LEU
1	F	250	GLU
1	F	255	MET
1	F	258	THR
1	F	262	GLU
1	F	264	GLU
1	F	266	THR
1	F	276	SER
1	F	312	ILE
1	F	319	ARG
1	F	327	GLN
1	F	348	LYS

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Mol	Chain	Res	Type
1	F	363	LEU
1	F	365	GLU
1	F	367	MET
1	F	369	SER
1	F	373	LYS
1	F	402	GLU
1	F	413	ASN
1	F	414	ASN
1	F	419	ASP
1	F	424	LEU
1	F	425	THR
1	F	445	ASP
1	F	456	SER
1	F	458	VAL
1	F	479	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (76) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	121	GLN
1	A	150	GLN
1	A	180	HIS
1	A	185	GLN
1	A	201	ASN
1	A	206	GLN
1	A	213	GLN
1	A	271	ASN
1	A	327	GLN
1	A	413	ASN
1	A	414	ASN
1	A	421	GLN
1	B	121	GLN
1	B	150	GLN
1	B	177	GLN
1	B	180	HIS
1	B	185	GLN
1	B	201	ASN
1	B	206	GLN
1	B	212	GLN
1	B	271	ASN
1	B	272	GLN
1	B	301	GLN

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Mol	Chain	Res	Type
1	B	327	GLN
1	B	340	ASN
1	B	413	ASN
1	B	414	ASN
1	B	421	GLN
1	C	121	GLN
1	C	177	GLN
1	C	180	HIS
1	C	185	GLN
1	C	206	GLN
1	C	271	ASN
1	C	274	GLN
1	C	308	ASN
1	C	327	GLN
1	C	413	ASN
1	C	414	ASN
1	C	421	GLN
1	C	444	GLN
1	D	121	GLN
1	D	185	GLN
1	D	192	GLN
1	D	194	GLN
1	D	201	ASN
1	D	206	GLN
1	D	295	GLN
1	D	327	GLN
1	D	413	ASN
1	D	414	ASN
1	D	421	GLN
1	D	427	GLN
1	E	121	GLN
1	E	177	GLN
1	E	180	HIS
1	E	185	GLN
1	E	201	ASN
1	E	272	GLN
1	E	327	GLN
1	E	340	ASN
1	E	413	ASN
1	E	414	ASN
1	E	421	GLN
1	E	444	GLN

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Mol	Chain	Res	Type
1	F	121	GLN
1	F	180	HIS
1	F	185	GLN
1	F	192	GLN
1	F	194	GLN
1	F	201	ASN
1	F	271	ASN
1	F	327	GLN
1	F	413	ASN
1	F	414	ASN
1	F	444	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 89 ligands modelled in this entry, 41 are monoatomic - leaving 48 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
4	FMT	F	508	-	2,2,2	0.29	0	1,1,1	0.14	0
4	FMT	B	513	-	2,2,2	0.29	0	1,1,1	0.13	0
4	FMT	C	515	-	2,2,2	0.25	0	1,1,1	0.17	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	GOL	A	502	-	5,5,5	0.12	0	5,5,5	0.35	0
5	BME	C	517	-	3,3,3	0.17	0	1,2,2	0.20	0
5	BME	E	515	-	3,3,3	0.14	0	1,2,2	0.01	0
5	BME	E	516	-	3,3,3	0.13	0	1,2,2	0.07	0
2	GOL	C	502	-	5,5,5	0.10	0	5,5,5	0.28	0
2	GOL	E	501	-	5,5,5	0.12	0	5,5,5	0.30	0
4	FMT	A	512	3	2,2,2	0.41	0	1,1,1	0.07	0
6	EDO	E	518	-	3,3,3	0.05	0	2,2,2	0.30	0
5	BME	B	519	-	3,3,3	0.15	0	1,2,2	0.07	0
4	FMT	B	516	-	2,2,2	0.33	0	1,1,1	0.11	0
4	FMT	F	507	-	2,2,2	0.28	0	1,1,1	0.15	0
4	FMT	E	512	-	2,2,2	0.24	0	1,1,1	0.17	0
5	BME	F	511	-	3,3,3	0.15	0	1,2,2	0.17	0
2	GOL	E	502	-	5,5,5	0.09	0	5,5,5	0.32	0
4	FMT	B	514	3	2,2,2	0.35	0	1,1,1	0.05	0
5	BME	C	518	-	3,3,3	0.12	0	1,2,2	0.43	0
5	BME	A	513	-	3,3,3	0.13	0	1,2,2	0.35	0
2	GOL	A	503	-	5,5,5	0.10	0	5,5,5	0.30	0
2	GOL	B	502	-	5,5,5	0.17	0	5,5,5	0.39	0
4	FMT	C	513	-	2,2,2	0.25	0	1,1,1	0.14	0
4	FMT	D	509	-	2,2,2	0.29	0	1,1,1	0.14	0
4	FMT	F	510	-	2,2,2	0.27	0	1,1,1	0.16	0
2	GOL	A	501	-	5,5,5	0.10	0	5,5,5	0.31	0
4	FMT	B	512	3	2,2,2	0.27	0	1,1,1	0.17	0
4	FMT	F	509	3	2,2,2	0.36	0	1,1,1	0.12	0
4	FMT	D	508	-	2,2,2	0.21	0	1,1,1	0.22	0
5	BME	E	517	-	3,3,3	0.07	0	1,2,2	0.21	0
2	GOL	B	501	-	5,5,5	0.07	0	5,5,5	0.28	0
4	FMT	E	510	-	2,2,2	0.30	0	1,1,1	0.12	0
2	GOL	D	501	-	5,5,5	0.11	0	5,5,5	0.39	0
2	GOL	C	501	-	5,5,5	0.11	0	5,5,5	0.29	0
4	FMT	E	511	-	2,2,2	0.35	0	1,1,1	0.10	0
5	BME	B	520	-	3,3,3	0.13	0	1,2,2	0.05	0
4	FMT	B	518	-	2,2,2	0.29	0	1,1,1	0.10	0
4	FMT	C	514	3	2,2,2	0.25	0	1,1,1	0.17	0
4	FMT	E	513	3	2,2,2	0.29	0	1,1,1	0.22	0
4	FMT	B	517	-	2,2,2	0.34	0	1,1,1	0.13	0
4	FMT	A	511	-	2,2,2	0.35	0	1,1,1	0.12	0
4	FMT	C	512	3	2,2,2	0.45	0	1,1,1	0.05	0
4	FMT	C	516	-	2,2,2	0.32	0	1,1,1	0.12	0
2	GOL	B	503	-	5,5,5	0.12	0	5,5,5	0.40	0
2	GOL	D	502	-	5,5,5	0.11	0	5,5,5	0.28	0
4	FMT	B	515	-	2,2,2	0.31	0	1,1,1	0.14	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	FMT	E	514	-	2,2,2	0.20	0	1,1,1	0.15	0
4	FMT	C	511	-	2,2,2	0.26	0	1,1,1	0.17	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	GOL	A	502	-	-	4/4/4/4	-
5	BME	C	517	-	-	1/1/1/1	-
5	BME	E	515	-	-	0/1/1/1	-
5	BME	E	516	-	-	1/1/1/1	-
2	GOL	C	502	-	-	2/4/4/4	-
2	GOL	E	501	-	-	2/4/4/4	-
6	EDO	E	518	-	-	0/1/1/1	-
5	BME	B	519	-	-	1/1/1/1	-
5	BME	F	511	-	-	1/1/1/1	-
2	GOL	E	502	-	-	3/4/4/4	-
5	BME	C	518	-	-	1/1/1/1	-
5	BME	A	513	-	-	0/1/1/1	-
2	GOL	A	503	-	-	4/4/4/4	-
2	GOL	B	502	-	-	3/4/4/4	-
2	GOL	A	501	-	-	4/4/4/4	-
5	BME	E	517	-	-	0/1/1/1	-
2	GOL	B	501	-	-	3/4/4/4	-
2	GOL	D	501	-	-	2/4/4/4	-
2	GOL	C	501	-	-	0/4/4/4	-
5	BME	B	520	-	-	1/1/1/1	-
2	GOL	B	503	-	-	2/4/4/4	-
2	GOL	D	502	-	-	2/4/4/4	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (37) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	502	GOL	O1-C1-C2-C3
2	A	502	GOL	C1-C2-C3-O3
2	A	502	GOL	O2-C2-C3-O3
2	A	503	GOL	O1-C1-C2-C3
2	A	503	GOL	C1-C2-C3-O3
2	B	501	GOL	C1-C2-C3-O3
2	B	503	GOL	O1-C1-C2-C3
2	C	502	GOL	O1-C1-C2-C3
2	D	501	GOL	O1-C1-C2-C3
2	E	501	GOL	O1-C1-C2-C3
5	B	520	BME	O1-C1-C2-S2
5	C	517	BME	O1-C1-C2-S2
5	C	518	BME	O1-C1-C2-S2
5	E	516	BME	O1-C1-C2-S2
5	F	511	BME	O1-C1-C2-S2
2	A	501	GOL	O1-C1-C2-O2
2	D	501	GOL	O1-C1-C2-O2
2	E	501	GOL	O1-C1-C2-O2
2	A	501	GOL	O1-C1-C2-C3
2	A	501	GOL	C1-C2-C3-O3
2	B	502	GOL	C1-C2-C3-O3
2	D	502	GOL	O1-C1-C2-C3
2	E	502	GOL	O1-C1-C2-C3
2	A	501	GOL	O2-C2-C3-O3
2	A	502	GOL	O1-C1-C2-O2
2	A	503	GOL	O2-C2-C3-O3
2	B	501	GOL	O2-C2-C3-O3
2	A	503	GOL	O1-C1-C2-O2
2	D	502	GOL	O1-C1-C2-O2
2	B	501	GOL	O1-C1-C2-O2
2	B	503	GOL	O1-C1-C2-O2
2	C	502	GOL	O1-C1-C2-O2
2	E	502	GOL	C1-C2-C3-O3
2	B	502	GOL	O2-C2-C3-O3
2	E	502	GOL	O1-C1-C2-O2
2	B	502	GOL	O1-C1-C2-C3
5	B	519	BME	O1-C1-C2-S2

There are no ring outliers.

28 monomers are involved in 68 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	F	508	FMT	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	B	513	FMT	1	0
2	A	502	GOL	3	0
5	C	517	BME	4	0
5	E	516	BME	3	0
2	E	501	GOL	1	0
4	A	512	FMT	2	0
6	E	518	EDO	3	0
4	B	516	FMT	1	0
4	F	507	FMT	1	0
2	E	502	GOL	15	0
4	B	514	FMT	1	0
5	C	518	BME	2	0
5	A	513	BME	2	0
2	A	503	GOL	2	0
4	C	513	FMT	2	0
4	D	509	FMT	1	0
4	F	510	FMT	3	0
2	A	501	GOL	3	0
4	D	508	FMT	1	0
2	B	501	GOL	6	0
4	E	510	FMT	2	0
2	D	501	GOL	4	0
4	B	518	FMT	1	0
4	A	511	FMT	1	0
4	C	512	FMT	1	0
4	B	515	FMT	1	0
4	E	514	FMT	1	0

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q< 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	331/410 (80%)	0.14	4 (1%) 79 83	22, 39, 70, 102	0
1	B	330/410 (80%)	0.20	4 (1%) 79 83	23, 39, 70, 89	0
1	C	333/410 (81%)	0.27	9 (2%) 54 61	29, 50, 87, 107	0
1	D	329/410 (80%)	0.34	15 (4%) 32 35	29, 50, 80, 112	0
1	E	328/410 (80%)	0.33	8 (2%) 59 66	30, 51, 79, 105	0
1	F	331/410 (80%)	0.35	15 (4%) 33 36	32, 53, 80, 112	0
All	All	1982/2460 (80%)	0.27	55 (2%) 53 60	22, 48, 78, 112	0

All (55) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	F	334	LYS	7.2
1	D	139	ALA	5.4
1	F	335	GLU	5.3
1	C	140	LEU	5.2
1	D	138	GLY	5.1
1	B	470	GLY	4.9
1	F	340	ASN	4.6
1	E	444	GLN	4.4
1	B	401	TYR	4.3
1	A	145	GLU	4.2
1	C	138	GLY	4.0
1	C	139	ALA	4.0
1	F	262	GLU	3.9
1	D	137	ALA	3.9
1	F	278	PHE	3.7
1	C	401	TYR	3.5
1	F	103	LEU	3.3
1	B	141	ARG	3.3
1	D	219	GLU	3.2

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Mol	Chain	Res	Type	RSRZ
1	A	281	GLN	3.1
1	F	401	TYR	3.1
1	D	446	GLU	2.8
1	B	146	MET	2.7
1	C	146	MET	2.6
1	D	103	LEU	2.6
1	D	457	ILE	2.6
1	A	444	GLN	2.6
1	F	219	GLU	2.6
1	D	286	LEU	2.5
1	E	207	MET	2.5
1	F	292	LEU	2.5
1	D	458	VAL	2.5
1	E	332	PHE	2.4
1	D	483	ARG	2.4
1	F	258	THR	2.4
1	E	334	LYS	2.3
1	D	218	ILE	2.3
1	F	330	ARG	2.3
1	A	401	TYR	2.3
1	F	264	GLU	2.3
1	D	445	ASP	2.3
1	D	443	LYS	2.3
1	E	466	LEU	2.2
1	C	444	GLN	2.2
1	E	165	LYS	2.2
1	E	344	LEU	2.2
1	C	335	GLU	2.2
1	F	403	PRO	2.2
1	C	215	LEU	2.1
1	E	173	ILE	2.1
1	D	191	GLU	2.0
1	F	294	LEU	2.0
1	C	218	ILE	2.0
1	D	475	ALA	2.0
1	F	287	PHE	2.0

6.2 Non-standard residues in protein, DNA, RNA chains

There are no non-standard protein/DNA/RNA residues in this entry.

6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
3	NA	B	511	1/1	0.49	0.27	57,57,57,57	0
3	NA	C	504	1/1	0.55	1.39	85,85,85,85	0
3	NA	B	509	1/1	0.56	0.44	68,68,68,68	0
2	GOL	E	502	6/6	0.62	1.35	107,115,118,118	0
2	GOL	E	501	6/6	0.63	1.49	163,167,170,173	0
2	GOL	C	502	6/6	0.67	0.65	106,107,114,115	0
2	GOL	A	503	6/6	0.70	0.44	81,86,88,92	0
4	FMT	B	514	3/3	0.70	0.55	59,59,61,63	0
6	EDO	E	518	4/4	0.70	0.27	82,85,87,90	0
4	FMT	E	510	3/3	0.71	0.24	74,74,75,77	0
3	NA	A	510	1/1	0.74	1.15	78,78,78,78	0
4	FMT	C	513	3/3	0.75	0.50	89,89,90,91	0
2	GOL	B	501	6/6	0.76	1.03	121,126,126,130	0
2	GOL	D	502	6/6	0.77	0.25	69,70,72,73	0
5	BME	E	517	4/4	0.77	0.45	69,70,71,74	0
3	NA	D	503	1/1	0.77	0.23	61,61,61,61	0
5	BME	C	518	4/4	0.79	0.42	94,94,96,102	0
5	BME	B	519	4/4	0.80	0.30	70,71,72,76	0
3	NA	A	509	1/1	0.80	0.54	54,54,54,54	0
4	FMT	C	514	3/3	0.81	1.32	123,123,125,126	0
2	GOL	D	501	6/6	0.81	0.81	93,96,97,101	0
2	GOL	A	502	6/6	0.82	0.35	57,61,62,64	0
4	FMT	B	517	3/3	0.82	0.52	87,87,88,89	0
3	NA	F	501	1/1	0.82	0.53	49,49,49,49	0
2	GOL	B	503	6/6	0.83	0.26	56,62,63,64	0
4	FMT	D	509	3/3	0.83	0.32	88,88,89,90	0
3	NA	D	506	1/1	0.83	0.24	68,68,68,68	0
4	FMT	E	513	3/3	0.83	0.54	91,91,93,93	0
4	FMT	E	511	3/3	0.84	0.60	61,61,64,66	0
2	GOL	A	501	6/6	0.84	0.92	74,88,91,93	0
3	NA	E	509	1/1	0.85	0.39	54,54,54,54	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
5	BME	F	511	4/4	0.85	0.24	66,71,73,79	0
3	NA	E	507	1/1	0.85	0.22	85,85,85,85	0
4	FMT	C	515	3/3	0.86	0.16	65,65,65,66	0
3	NA	C	510	1/1	0.87	0.19	66,66,66,66	0
3	NA	A	506	1/1	0.87	0.34	49,49,49,49	0
2	GOL	C	501	6/6	0.88	0.18	59,62,65,66	0
5	BME	B	520	4/4	0.88	0.16	95,99,100,101	0
4	FMT	C	516	3/3	0.88	0.19	62,62,65,65	0
3	NA	E	506	1/1	0.89	0.14	55,55,55,55	0
4	FMT	F	508	3/3	0.89	0.46	88,88,89,89	0
3	NA	D	507	1/1	0.90	0.59	69,69,69,69	0
4	FMT	B	518	3/3	0.90	0.22	58,58,61,62	0
5	BME	E	516	4/4	0.90	0.22	91,96,98,100	0
4	FMT	A	511	3/3	0.90	1.31	69,69,76,80	0
5	BME	A	513	4/4	0.90	0.70	117,120,123,127	0
3	NA	A	504	1/1	0.90	0.24	36,36,36,36	0
3	NA	C	509	1/1	0.91	0.22	63,63,63,63	0
3	NA	F	504	1/1	0.91	0.18	68,68,68,68	0
4	FMT	F	507	3/3	0.91	0.20	71,71,75,78	0
4	FMT	A	512	3/3	0.92	0.39	61,61,63,63	0
4	FMT	C	512	3/3	0.92	0.40	53,53,56,57	0
3	NA	B	506	1/1	0.92	0.16	91,91,91,91	0
3	NA	E	508	1/1	0.92	0.14	60,60,60,60	0
3	NA	F	503	1/1	0.93	0.15	54,54,54,54	0
4	FMT	E	514	3/3	0.93	1.04	89,89,91,92	0
3	NA	A	505	1/1	0.93	0.32	46,46,46,46	0
3	NA	C	503	1/1	0.93	0.30	61,61,61,61	0
3	NA	E	503	1/1	0.93	0.19	46,46,46,46	0
3	NA	B	504	1/1	0.93	0.27	52,52,52,52	0
5	BME	E	515	4/4	0.94	0.12	70,73,73,73	0
4	FMT	B	515	3/3	0.94	0.47	72,72,80,84	0
4	FMT	C	511	3/3	0.94	0.19	44,44,47,49	0
5	BME	C	517	4/4	0.94	0.21	61,63,64,65	0
3	NA	B	508	1/1	0.94	0.31	35,35,35,35	0
4	FMT	F	509	3/3	0.95	0.35	55,55,57,58	0
4	FMT	F	510	3/3	0.95	0.46	75,75,75,80	0
4	FMT	B	513	3/3	0.95	0.29	52,52,58,63	0
3	NA	C	507	1/1	0.95	0.48	64,64,64,64	0
3	NA	B	507	1/1	0.95	0.64	52,52,52,52	0
3	NA	F	502	1/1	0.95	0.34	51,51,51,51	0
3	NA	E	504	1/1	0.95	0.15	41,41,41,41	0
4	FMT	E	512	3/3	0.95	0.44	89,89,89,90	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
2	GOL	B	502	6/6	0.95	0.28	47,48,50,50	0
3	NA	F	506	1/1	0.95	0.31	52,52,52,52	0
3	NA	A	508	1/1	0.95	0.47	95,95,95,95	0
3	NA	C	505	1/1	0.95	0.19	44,44,44,44	0
4	FMT	D	508	3/3	0.96	0.24	45,45,46,49	0
3	NA	D	504	1/1	0.97	1.16	52,52,52,52	0
4	FMT	B	512	3/3	0.97	0.17	47,47,52,57	0
4	FMT	B	516	3/3	0.97	0.47	63,63,66,67	0
3	NA	D	505	1/1	0.97	0.37	47,47,47,47	0
3	NA	B	505	1/1	0.98	0.72	55,55,55,55	0
3	NA	E	505	1/1	0.98	0.55	55,55,55,55	0
3	NA	C	508	1/1	0.98	0.22	55,55,55,55	0
3	NA	B	510	1/1	0.98	0.16	66,66,66,66	0
3	NA	F	505	1/1	0.98	0.27	63,63,63,63	0
3	NA	A	507	1/1	0.98	0.57	53,53,53,53	0
3	NA	C	506	1/1	0.98	0.31	45,45,45,45	0

6.5 Other polymers [i](#)

There are no such residues in this entry.